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ORNL
FOREIGN TRIP REPORT
TA 409023

DATE: November 27, 2017
SUBJECT: Report of Foreign Travel to Vienna, Austria – Marco T. Pigni, Reactor and Nuclear Systems Division (RNSD)
TO: Angela Chambers, Nuclear Criticality Safety Program Manager, National Nuclear Security Administration / NA-511/GTN, Pantex Plant, PO Box 30020, Amarillo, TX 79120-0020

FROM: Marco T. Pigni

MEETING TITLE: R-Matrix Codes for Charged-Particle Reactions
MEETING LOCATION: International Atomic Energy Agency (IAEA) Headquarters in Vienna, Austria
MEETING DATES: 6/28/17 – 6/30/17
ATTENDEES ON BEHALF OF NCSP: Marco T. Pigni
MEETING BENEFIT TO NCSP: To test and validate the R-matrix code SAMMY for resonance evaluations with ingoing and outgoing charged-particle reactions such as $^{16}\text{O}(n,\alpha)$.

MEETING PURPOSE: Follow up on the progress in R-matrix codes and to discuss the evaluation process for charged-particle reactions in the Resolved Resonance Region (RRR).

SITES VISITED: International Atomic Energy Agency (IAEA) Headquarters in Vienna, Austria

ABSTRACT: The traveler made a trip to the International Atomic Energy Agency (IAEA) Headquarters to provide consultation regarding the validation of computational tools like SAMMY and other R-matrix codes on induced charged-particle cross sections. Historically, SAMMY was designed for resonance evaluation of heavy nuclei for which it is uncommon to have threshold reaction channels opening in the resolved resonance region. However, for light nuclei there may be several excited states opening for reaction channels such as inelastic scattering or charge-particle emission.

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on the distribution list and to U.S. Government Agencies and their Contractors.**

REPORT OF FOREIGN TRAVEL

**Marco Pigni
Vienna, Austria
June 26 – July 4, 2017**

PURPOSE OF TRAVEL

The International Atomic Energy Agency (IAEA) invited Marco T. Pigni as a consultant to follow up on the progress in R-matrix codes and to discuss the evaluation process for charged-particle reactions in the RRR.

The IAEA provided a lump sum for the travel and living expenses as described in the attached invitation letter. The time spent in Vienna during the assignment was paid equally by NCSP and NRSD organizational funds.

Persons Contacted at <Location>

Mark Paris (LANL)
Joseph Thompson (LLNL)
Helmut Leeb (University of Vienna)
Richard J. DeBoer (Notre Dame)
Satoshi Kunieda (JAEA)
Paraskevi Dimitriou (IAEA)
Roberto Capote (IAEA)
Andrej Trkov (IAEA)
Chen Zhenpeng (Tsinghua University)

Itinerary

06/26/17 – 6/27/17	Travel from Knoxville, USA to Vienna, Austria
06/28/17 – 6/30/17	Meetings at IAEA Headquarters
7/1/17 – 7/3/17	Personal Time
7/4/17	Travel from Vienna, Austria to Knoxville, USA

DISTRIBUTION

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IAEA

Atoms for Peace

الوكالة الدولية للطاقة الذرية

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International Atomic Energy Agency

Agence Internationale de l'énergie atomique

Международное агентство по атомной энергии

Organismo Internacional de Energía Atómica

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2017-03-21

Excellency,

I have the honour to inform you that the International Atomic Energy Agency (IAEA) requires consultants' advice on **R-Matrix Codes for Charged-Particle Reactions** at the IAEA's Headquarters in Vienna, Austria, from **28 to 30 June 2017**.

The purpose of the consultancy assignment is to follow up on the progress in R-matrix codes and to discuss the evaluation process for charged-particle reactions in the Resolved-Resonance Region.

In this regard, I should be grateful if your Government would make available the services of

Mr Richard James DeBoer (225 Nieuwland Science Centre, Notre Dame, E-mail: Richard.J.deBoer.12@nd.edu), **Mr Marco Pigni** (Oak Ridge National Laboratory, P.O. Box 2008, Bldg. 5700, Oak Ridge, E-mail: pignimt@ornl.gov), **Mr Mark Paris** (Los Alamos National Laboratory, Theoretical Division, MS B283, Los Alamos, E-mail: mparis@lanl.gov) and **Mr Ian Joseph Thompson** (Lawrence Livermore Laboratory, L-414, Livermore, E-mail: thompson97@llnl.gov) for this assignment.

The IAEA will provide Mr DeBoer with a lump sum of €2550 and Mr Pigni with a lump sum of €2840 for the travel expenses to and from Vienna and for living expenses, including incidentals, connected with the assignment. The consultants would then be fully responsible for making the necessary travel arrangements and for cancellation costs, if any. This amount has been calculated on the assumption that the consultant will stay for the total duration of the assignment. Should this not be the case, the consultants would be requested to reimburse the IAEA for the appropriate difference.

We understand that all expenses incurred in connection with the consultant's services of Mr Paris and Mr Thompson will be paid by the consultants' authorities.

It should be noted that compensation is not payable by the IAEA for any damage to or loss of personal property. The IAEA also does not provide health insurance coverage for participants in meetings, workshops or training courses or for consultants. Arrangements for private insurance coverage on an individual basis should therefore be made. The IAEA will, however, provide insurance coverage for accidents and illnesses that clearly result from any work performed for the IAEA.

It would be appreciated if your Government's confirmation could reach the IAEA not later than **31 March 2017**. Ms Paraskevi Dimitriou of the Division of Physical and Chemical Sciences (Email: p.dimitriou@iaea.org) is the responsible officer who will contact the consultant directly concerning further arrangements.

Accept, Excellency, the assurances of my highest consideration.



Meera Venkatesh
Director
Division of Physical and Chemical Sciences
Department of Nuclear Sciences and Applications